

REMARKS

Careful consideration has been given by the applicants to the Examiner's comments and rejection of the claims, as set forth in the outstanding Office Action, and favorable reconsideration and allowance of the application, as amended, is earnestly solicited.

Applicants note the Examiner's rejection of Claims 1-15 under 35 U.S. C. §102(e) as being anticipated by Granik, et al., U.S. Patent No. 6,928,634, as extensively detailed in the Office Action, wherein the Examiner has reviewed each claim in particular specific aspect.

However, upon careful consideration of Granik, et al., applicants respectfully submit that the claims, as presently on file, are clearly and unambiguously directed to features for which patent protection should be granted.

Concerning the foregoing, Granik, et al. discloses a matrix optical process correction (OPC), wherein a semiconductor layout can be verified and, in particular, to enhance the precision in the manufacture of circuit designs, which are created through the intermediary photolithography.

Furthermore, concerning the foregoing, Granik, et al. primarily employs a process and a system, as is described in connection with the discussion of the technology and the state of the prior art in the present specification. To the contrary, the particular interlinked constrains, as are considered in the present application to be the inventive features, incorporate traditional constraints on the feature edge position and also additionally provide for an improvement in the representation of circuit electrical properties in that the process window is determined purely through a calculation of image intensities and computationally equivalent quantities.

Hereby, relative to the foregoing, pursuant to the invention, there is provided a linkage in the intensity of the images which are calculated and computationally equivalent quantities for determining the process window.

In contrast with the claimed invention, and as elucidated in the specification, Granik, et al. does not clearly provide for such a method of calculation of image intensities and, in contrast therewith, the present invention is imbued with the advantage that the lithographic process window is determined purely through the calculation of image intensities and slopes. Consequently, the method can be quite rapid in its physical application since it enables a utilization of the advantage of known methods for rapid calculation of image intensities, and uniquely obviates the need for geometrical shape processing during optimization.

The Granik, et al. patent, in a distinction over the invention, utilizes the methodology employing shapes in order to obtain the optimized position of each fragment of a mask in the relationship with a number of edges which are to be created on a wafer.

In order to clearly provide the advantages over Granik, et al., the present invention, as set forth in the claims, also relates to the specifying of a preliminary set of printed circuit feature edge locations where the model region at each edge location is centered upon the printed edge of the circuit layout reaching the exterior of the model region and then also specifying a set of link constraints, which also provide for computing models of the image intensities, which are projected within a trust region to a preliminary location of the circuit feature edges.

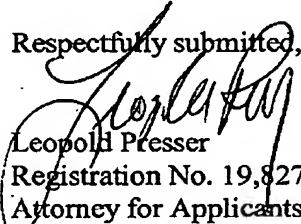
The foregoing interlinked relationships, in effectuating the method for lithographic process window optimization, cannot in any manner be ascertained from Granik, et al., or from any of the other secondary references which are considered to be primarily technological background material.

In order to clearly and specifically emphasize the foregoing features, Claim 1 has been amended to incorporate the limitation of Claim 2, whereas similarly, Claim 6 incorporates the limitation of Claim 7; and Claim 11 incorporates the limitation of Claim 12.

These particular additional features in each of the independent claims are deemed to clearly and unambiguously distinguish over Granik, et al. so as to be directed to allowable subject matter not at all contemplated nor suggested in the art of record, while the various dependent claims set forth further novel aspects.

In view of the foregoing comments and amendments, which are deemed to be fully responsive to the Examiner's rejection of the claims, and wherein applicants respectfully submit that the claims are considered to be in condition for allowance, the early and favorable reconsideration of the application and issuance of the Notice of Allowance are earnestly solicited. However, in the event that the Examiner has any queries concerning the instantly submitted Amendment, applicants' attorney respectfully requests that he be accorded the courtesy of possibly a telephone conference to discuss any matters in need of attention.

Respectfully submitted,


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